

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number  
**WO 2004/058194 A1**

- (51) International Patent Classification<sup>7</sup>: **A61K 6/06**, C04B 28/06
- (21) International Application Number: PCT/SE2003/002090
- (22) International Filing Date: 30 December 2003 (30.12.2003)
- (25) Filing Language: Swedish
- (26) Publication Language: English
- (30) Priority Data: 0203910-5 31 December 2002 (31.12.2002) SE
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- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**WO 2004/058194 A1**

(54) Title: CHEMICALLY BONDED BIOMATERIAL WITH TAILORED PROPERTIES

$$\lambda = \frac{d * (1 - V_F)}{(V_F)} \quad (I)$$

(57) Abstract: A chemically bonded biomaterial element composed of an inorganic cement, exhibiting minimal dimensional changes upon hardening and long-time use, improved mechanical properties and improved translucency. An algorithm to describe the micro-structure is expressed as (I) where  $\lambda$  is the distance between filler particles of mean size  $d$ , and  $V_F$  is the volume content of non-reacted cement and added filler, and where  $\lambda = 10 \mu\text{m}$ . The invention also relates to a device in connection with the preparation of a chemically bonded biomaterial element according to the invention.